## 10/538343

## SEQUENCE LISTING JC20 Rec'd PCT/PTO 1 0 JUN 2005

									•		) Ke	c'd F	CT/I	PTO	10	<b>JUN 20</b>	Į
<110>	Gibso Hanse													. •	- 0	30N Z0	
<120>	Deter	gen	t coi	mpos	itio	n											
<130>	10383	3.20	4-US														
<160>	12																
<170>	Pater	ntIn	ver	sion	3.3												
<210> <211> <212> <213>	2322 DNA	.lus	sp.														
<220> <221> <222>		(232	22)														
<400> gca gaa Ala Glu 1				_	_	-										48	
gac aat Asp Asi																96	
gtc gat Val Asp																144	
tta cgt Leu Arc 50		-	_									_		_		192	
aat gat Asn As <sub>l</sub> 65																240	
att cgt Ile Arc																288	
gag tta Glu Lei	ı Ile															336	
aat gad Asn Asp																384	
cct aga	gat	ccc	gtt	tac	gct	gga	gca	gaa	gat	ttc	ttt	aga	gat	att		432	

Pro	Arg 130	Asp	Pro	Val	Tyr	Ala 135	Gly	Ala	Glu	Asp	Phe 140	Phe	Arg	Asp	Ile		
							cca Pro									480	
							ggt Gly									528	
							gaa Glu									576	
							gat Asp 200									624	
							gac Asp									672	
							gtt Val									720	
-				_		_	cct Pro	_								768	
							tat Tyr									816	
							agt Ser 280									864	
							tgg Trp									912	
							tta Leu									960	
							ggt Gly									1008	
							gca Ala									1056	
							aaa Lys									1104	

355	360	)	365	
_	acg aaa gta ctt Thr Lys Val Leu 375			-
	gtg aat tcg gat Val Asn Ser Asp 390			
	aac aac act tto Asn Asn Thr Leu 405		<del>-</del>	Ser
	gat ggc aac tto Asp Gly Asn Phe			
	aaa agt gtt gat Lys Ser Val Asp 440	Ile Leu Gly		
	gtt gat gaa cca Val Asp Glu Pro 455			
	aaa agt gga tgg Lys Ser Gly Trp 470			
	gat ttt gtt cag Asp Phe Val Gln 485			Ala
	aca gga gaa gat Thr Gly Glu Asp			
	gat aac aat atg Asp Asn Asn Met 520	Asn Asn Ile		
	gac gtt att tac Asp Val Ile Tyr 535			
	att cca gtt gtt Ile Pro Val Val 550			
	ttt gaa gac ggt Phe Glu Asp Gly 565			Ala
	gtg aaa aca gct Val Lys Thr Ala			

tct a Ser A	sn Ā	_				_						1824
gat a Asp A 6												1872
gtt c Val A 625		_	-		_		_	-	_		_	1920
gtt c Val A												1968
cct a Pro T		sn										2016
ttt g Phe A	sp G											2064
gaa g Glu V 6	-				-	_	-					2112
tta c Leu L 705												2160
gca g Ala G												2208
act g Thr G		ro										2256
cct g Pro V	al A											2304
gaa g Glu G 7					taa							2322
<210> <211> <212> <213>	77 PR	T	lus	sp.								

<400> 2

Ala Glu Gly Asn Thr Arg Glu Asp Asn Phe Lys His Leu Leu Gly Asn Asp Asn Val Lys Arg Pro Ser Glu Ala Gly Ala Leu Gln Leu Gln Glu Val Asp Gly Gln Met Thr Leu Val Asp Gln His Gly Glu Lys Ile Gln 40 Leu Arg Gly Met Ser Thr His Gly Leu Gln Trp Phe Pro Glu Ile Leu Asn Asp Asn Ala Tyr Lys Ala Leu Ala Asn Asp Trp Glu Ser Asn Met 70 Ile Arg Leu Ala Met Tyr Val Gly Glu Asn Gly Tyr Ala Ser Asn Pro 85 Glu Leu Ile Lys Ser Arg Val Ile Lys Gly Ile Asp Leu Ala Ile Glu 100 105 Asn Asp Met Tyr Val Ile Val Asp Trp His Val His Ala Pro Gly Asp 115 Pro Arq Asp Pro Val Tyr Ala Gly Ala Glu Asp Phe Phe Arg Asp Ile Ala Ala Leu Tyr Pro Asn Asn Pro His Ile Ile Tyr Glu Leu Ala Asn 145 150 Glu Pro Ser Ser Asn Asn Gly Gly Ala Gly Ile Pro Asn Asn Glu 170 165 Glu Gly Trp Asn Ala Val Lys Glu Tyr Ala Asp Pro Ile Val Glu Met 180 185 Leu Arg Asp Ser Gly Asn Ala Asp Asp Asn Ile Ile Ile Val Gly Ser 200 195 205 Pro Asn Trp Ser Gln Arg Pro Asp Leu Ala Ala Asp Asn Pro Ile Asn 210 215 220

Asp His His Thr Met Tyr Thr Val His Phe Tyr Thr Gly Ser His Ala

Ala Ser Thr Glu Ser Tyr Pro Pro Glu Thr Pro Asn Ser Glu Arg Gly
245 250 255

Asn Val Met Ser Asn Thr Arg Tyr Ala Leu Glu Asn Gly Val Ala Val 260 265 270

Phe Ala Thr Glu Trp Gly Thr Ser Gln Ala Asn Gly Asp Gly Pro 275 280 285

Tyr Phe Asp Glu Ala Asp Val Trp Ile Glu Phe Leu Asn Glu Asn Asn 290 295 300

Ile Ser Trp Ala Asn Trp Ser Leu Thr Asn Lys Asn Glu Val Ser Gly 305 310 315 320

Ala Phe Thr Pro Phe Glu Leu Gly Lys Ser Asn Ala Thr Asn Leu Asp 325 330 335

Pro Gly Pro Asp His Val Trp Ala Pro Glu Glu Leu Ser Leu Ser Gly 340 345 350

Glu Tyr Val Arg Ala Arg Ile Lys Gly Val Asn Tyr Glu Pro Ile Asp 355 360 365

Arg Thr Lys Tyr Thr Lys Val Leu Trp Asp Phe Asn Asp Gly Thr Lys 370 375 380

Gln Gly Phe Gly Val Asn Ser Asp Ser Pro Asn Lys Glu Leu Ile Ala 385 390 395 400

Val Asp Asn Glu Asn Asn Thr Leu Lys Val Ser Gly Leu Asp Val Ser 405 410 415

Asn Asp Val Ser Asp Gly Asn Phe Trp Ala Asn Ala Arg Leu Ser Ala 420 425 430

Asp Gly Trp Gly Lys Ser Val Asp Ile Leu Gly Ala Glu Lys Leu Thr 435 440 445

Met Asp Val Ile Val Asp Glu Pro Thr Thr Val Ala Ile Ala Ala Ile 450 455 460

Pro 465	Gln	Ser	Ser	Lys	Ser 470	Gly	Trp	Ala	Asn	Pro 475	Glu	Arg	Ala	Val	Arg 480
Val	Asn	Ala	Glu	Asp 485	Phe	Val	Gln	Gln	Thr 490	Asp	Gly	Lys	Tyr	Lys 495	Ala
Gly	Leu	Thr	Ile 500	Thr	Gly	Glu	Asp	Ala 505	Pro	Asn	Leu	Lys	Asn 510	Ile	Ala
Phe	His	Glu 515	Glu	Asp	Asn	Asn	Met 520	Asn	Asn	Ile	Ile	Leu 525	Phe	Val	Gly
Thr	Asp 530	Ala	Ala	Asp	Val	Ile 535	Tyr	Leu	Asp	Asn	Ile 540	Lys	Val	Ile	Gly
Thr 545	Glu	Val	Glu	Ile	Pro 550	Val	Val	His	Asp	Pro 555	Lys	Gly	Glu	Ala	Val 560
Leu	Pro	Ser	Val	Phe 565	Glu	Asp	Gly	Thr	Arg 570	Gln	Gly	Trp	Asp	Trp 575	Ala
Gly	Glu	Ser	Gly 580	Val	Lys	Thr	Ala	Leu 585	Thr	Ile	Glu	Glu	Ala 590	Asn	Gly <sub>.</sub>
Ser	Asn	Ala 595	Leu	Ser	Trp	Glu	Phe 600	Gly	Tyr	Pro	Glu	Val 605	Lys	Pro	Ser
Asp	Asn 610	Trp	Ala	Thr	Ala	Pro 615	Arg	Leu	Asp	Phe	Trp 620	Lys	Ser	Asp	Leu
Val 625	Arg	Gly	Glu	Asn	Asp 630	Tyr	Val	Ala	Phe	Asp 635	Phe	Tyr	Leu	Asp	Pro 640
Val	Arg	Ala	Thr	Glu 645	Gly	Ala	Met	Asn	Ile 650	Asn	Leu	Val	Phe	Gln 655	Pro
Pro	Thr	Asn	Gly 660	Tyr	Trp	Val	Gln	Ala 665	Pro	Lys	Thr	Tyr	Thr 670	Ile	Asn
Phe	Asp	Glu 675	Leu	Glu	Glu	Ala	Asn 680	Gln	Val	Asn	Gly	Leu 685	Tyr	His	Tyr

Glu Val Lys Ile Asn Val Arg Asp Ile Thr Asn Ile Gln Asp Asp Thr 695 Leu Leu Arg Asn Met Met Ile Ile Phe Ala Asp Val Glu Ser Asp Phe 715 720 705 710 Ala Gly Arg Val Phe Val Asp Asn Val Arg Phe Glu Gly Ala Ala Thr 725 Thr Glu Pro Val Glu Pro Glu Pro Val Asp Pro Gly Glu Glu Thr Pro 745 Pro Val Asp Glu Lys Glu Ala Lys Lys Glu Gln Lys Glu Ala Glu Lys 760 Glu Glu Lys Glu Glu 770 <210> 3 <211> 1174 <212> DNA <213> Thielavia terrestris <220> <221> CDS <222> (60)..(956)<400> 3 gagcagcacc cctcaagctg tacagtttcc accccgctct cttttcttcg gcccccagg 59 107 atg ege tet act eee gtt ett ege aca ace etg gee get gea ett eet Met Arg Ser Thr Pro Val Leu Arg Thr Thr Leu Ala Ala Ala Leu Pro 5 155 ctg qtc qcc tcc gcg gcc agt ggc agt ggc cag tcc acg aga tac tgg Leu Val Ala Ser Ala Ala Ser Gly Ser Gly Gln Ser Thr Arg Tyr Trp 203 gac tgc tgc aag ccg tcg tgc gct tgg ccc ggg aag gcc gcc gtc agc Asp Cys Cys Lys Pro Ser Cys Ala Trp Pro Gly Lys Ala Ala Val Ser 35 251 caa ccg gtc tac gcg tgc gat gcc aac ttc cag cgc ctg tcc gac ttc Gln Pro Val Tyr Ala Cys Asp Ala Asn Phe Gln Arg Leu Ser Asp Phe 50 55 299 aat gtc cag tcg ggc tgc aac ggc ggc tcg gcc tac tcc tgc gcc gac Asn Val Gln Ser Gly Cys Asn Gly Gly Ser Ala Tyr Ser Cys Ala Asp 65 70 75

					aac Asn											347
					tcc Ser											395
					ggt Gly		-	-		_		_				443
_		-	_		 ggc Gly 135	-	_		_		_		_			491
					gtg Val											539
					gct Ala											587
_	_	_			gcg Ala	_		_			_	_				635
					gcc Ala											683
					atc Ile 215											731
_	_		_		gtc Val					_						779
					tcg Ser											827
				_	 tgc Cys	_		_	_		_	_	-			875
				_	 tgc Cys			_	-					_		923
_	_	-		_	tac Tyr 295	_	_	_		taaa	acago	ett t	tcgc	cacga	g	976

- <210> 4
- <211> 299
- <212> PRT
- <213> Thielavia terrestris
- <400> 4

Met Arg Ser Thr Pro Val Leu Arg Thr Thr Leu Ala Ala Ala Leu Pro 1 5 10 15

Leu Val Ala Ser Ala Ala Ser Gly Ser Gly Gln Ser Thr Arg Tyr Trp
20 25 30

Asp Cys Cys Lys Pro Ser Cys Ala Trp Pro Gly Lys Ala Ala Val Ser 35 40 45

Gln Pro Val Tyr Ala Cys Asp Ala Asn Phe Gln Arg Leu Ser Asp Phe 50 55 60

Asn Val Gln Ser Gly Cys Asn Gly Gly Ser Ala Tyr Ser Cys Ala Asp 65 70 75 80

Gln Thr Pro Trp Ala Val Asn Asp Asn Leu Ala Tyr Gly Phe Ala Ala 85 90 95

Thr Ser Ile Ala Gly Gly Ser Glu Ser Ser Trp Cys Cys Ala Cys Tyr 100 105 110

Ala Leu Thr Phe Thr Ser Gly Pro Val Ala Gly Lys Thr Met Val Val 115 120 125

Gln Ser Thr Ser Thr Gly Gly Asp Leu Gly Ser Asn Gln Phe Asp Ile 130 135 140

Ala Met Pro Gly Gly Gly Val Gly Ile Phe Asn Gly Cys Ser Ser Gln 145 150 155 160

Phe Gly Gly Leu Pro Gly Ala Gln Tyr Gly Gly Ile Ser Ser Arg Asp

165 170 175

Gln Cys Asp Ser Phe Pro Ala Pro Leu Lys Pro Gly Cys Gln Trp Arg 180 185 190

Phe Asp Trp Phe Gln Asn Ala Asp Asn Pro Thr Phe Thr Phe Gln Gln 195 200 205

Val Gln Cys Pro Ala Glu Ile Val Ala Arg Ser Gly Cys Lys Arg Asn 210 215 220

Asp Asp Ser Ser Phe Pro Val Phe Thr Pro Pro Ser Gly Gly Asn Gly 225 230 235 240

Gly Thr Gly Thr Pro Thr Ser Thr Ala Pro Gly Ser Gly Gln Thr Ser 245 250 255

Pro Gly Gly Gly Ser Gly Cys Thr Ser Gln Lys Trp Ala Gln Cys Gly 260 265 270

Gly Ile Gly Phe Ser Gly Cys Thr Thr Cys Val Ser Gly Thr Thr Cys 275 280 285

Gln Lys Leu Asn Asp Tyr Tyr Ser Gln Cys Leu 290 295

<210> 5

<211> 42

<212> DNA

<213> Artificial

<220>

<223> Primer

<220>

<221> misc\_feature

<222> (1)..(42)

<223> PRIMER LWN5494

<400> 5

gtcgccgggg cggccgctat caattggtaa ctgtatctca gc

42

<210> 6

<211> 64

<212> DNA

<213> Artificial

```
<220>
<223> Primer
<220>
<221> misc_feature
<222> (1)..(64)
<223> Primer LWN5495
<400> 6
gtcgcccggg agctctgatc aggtaccaag cttgtcgacc tgcagaatga ggcagcaaga
                                                                     64
<210> 7
<211> 61
<212> DNA
<213> artificial
<220>
<223> Primer
<220>
<221> misc_feature
<222> (1)..(61)
<223> PRIMER LWN5938
qtcqqcqqcc gctgatcacg taccaagctt gtcgacctgc agaatgaggc agcaagaaga
                                                                     61
t
<210> 8
<211> 35
<212> DNA
<213> artificial
<220>
<223> Primer
<220>
<221> misc_feature
<222> (1)..(35)
<223> PRIMER LWN5939
                                                                     35
gtcggagctc tatcaattgg taactgtatc tcagc
<210> 9
<211> 35
<212> DNA
```

```
<213> Artificial
<220>
<223> Primer
<220>
<221> misc_feature
<222> (1)..(35)
<223> PRIMER LWN7864
<400> 9
                                                                     35
aacagctgat cacgactgat cttttagctt ggcac
<210> 10
<211> 37
<212> DNA
<213> Artificial
<220>
<223> Primer
<220>
<221> misc_feature
<222> (1)..(37)
<223> PRIMER LWN7901
<400> 10
                                                                     37
aactgcagcc gcggcacatc ataatgggac aaatggg
<210> 11
<211> 42
<212> DNA
<213> Artificial
<220>
<223> Primer
<220>
<221> misc feature
<222> (1)..(42)
<223> Primer 168684
<400> 11
                                                                     42
cattctgcag ccgcggcagc agaaggaaac actcgtgaag ac
<210> 12
<211> 44
<212> DNA
<213> Artificial
<220>
```

<220>
<221> misc\_feature
<222> (1)..(44)
<223> Primer 168685

<400> 12
gcgttgagac gcgcggccgc ttactcttct ttctcttttt tctc 44

14